UCSF
UC San Francisco Previously Published Works

Title
Commitment, interpersonal stigma, and mental health in romantic relationships between transgender women and cisgender male partners.

Permalink
https://escholarship.org/uc/item/0h88c3p0

Journal
Journal of social and personal relationships, 36(7)

ISSN
0265-4075

Authors
Gamarel, Kristi E
Sevelius, Jae M
Reisner, Sari L
et al.

Publication Date
2019-07-01

DOI
10.1177/0265407518785768

Peer reviewed

eScholarship.org Powered by the California Digital Library
University of California

Check for updates

JSPR

Article

Journal of Social and Personal Relationships
1–22
© The Author(s) 2018
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/0265407518785768
journals.sagepub.com/home/spr
SAGE

Commitment, interpersonal stigma, and mental health in romantic relationships between transgender women and cisgender male partners

Kristi E. Gamarel[1,2], Jae M. Sevelius[3], Sari L. Reisner[4,5,6], Cassandra Sutten Coats[7], Tooru Nemoto[8], and Don Operario[7]

Abstract

The goals of this study were to (a) examine associations between interpersonal stigma and psychological distress among a sample of transgender women and their cisgender male partners and (b) identify whether commitment moderates the association between interpersonal stigma and psychological distress. To address these aims, 191 couples consisting of transgender women and their cisgender male partners completed a one-time survey. Actor–partner interdependence models were fit to examine stigma, commitment, and their interaction on psychological distress. More frequent experiences of interpersonal stigma were associated with elevated psychological distress for both partners. For transgender women, higher commitment was associated with lower psychological distress. There was a significant interaction effect such that the association between interpersonal stigma and psychological distress was attenuated by greater

[1] University of Michigan School of Public Health, USA
[2] Center for Sexuality Health Disparities, University of Michigan School of Nursing, USA
[3] University of California, USA
[4] Harvard T.H. Chan School of Public Health, USA
[5] Harvard Medical School, USA
[6] Fenway Health, USA
[7] Brown University School of Public Health, USA
[8] Public Health Institute, USA

Corresponding author:
Kristi E. Gamarel, Department of Health Behavior and Health Education, University of Michigan School of Public Health, 1415 Washington Heights, Ann Arbor, MI 48109, USA.
Email: kgamarel@umich.edu

commitment for transgender women but not for their cisgender male partners. Findings provide preliminary support for associations between interpersonal stigma and mental health of both partners and identify commitment as a potential stress buffer for transgender women.

Keywords
Commitment, couples, mental health, stigma, transgender women

A number of studies suggest that primary intimate relationships are fundamental in maintaining physical health and emotional well-being (Revenson & DeLongis, 2011). Individuals who are in romantic relationships tend to suffer from fewer diseases, have improved immune functioning (Robles & Kiecolt-Glaser, 2003), heal faster (Kiecolt-Glaser et al., 2005), and have fewer mental health and depressive symptoms (Seeman, 2001) than their nonpartnered counterparts. A primary assumption underlying theories of relationship science is that commitment to one's partner is an important cognitive precursor to engaging in relationship maintenance and optimal health behaviors (Lewis et al., 2006; Rusbult & Buunk, 1993). However, stigma has been negatively associated with mental health and relationship well-being among individuals in marginalized relationships. The phrase "marginalized relationships" refers to romantic relationships in which couples experience societal disapproval as a result of their union (Lehmiller & Agnew, 2006). Studies have consistently demonstrated that interpersonal stigma is associated with lower relationship quality in marginalized relationships, including in same-sex couples (Lehmiller & Agnew, 2006; Rosenthal & Starks, 2015), interracial couples (Lehmiller & Agnew, 2006; Rosenthal & Starks, 2015), and transgender women (i.e., individuals assigned a male sex at birth who identify as a woman, transgender woman, or other gender identity) and their cisgender (i.e., nontransgender) male partners (Gamarel, Reisner, Laurenceau, Nemoto, & Operario, 2014).

Stigma is a social process of othering, labeling, stereotyping, and rejecting individual differences as a means of social control (Link & Phelan, 2001; Phelan, Link, & Dovidio, 2008). *Interpersonal* stigma refers to direct or enacted forms of stigma, such as verbal harassment and/or physical assault based on one's social identity (Link & Phelan, 2001). Studies have shown that interpersonal stigma is associated with lower levels of commitment among individuals in marginalized relationships (Rosenthal & Starks, 2015), which is considered an important precursor of partner's engaging in behaviors that promote the health and well-being of both couple members (Rusbult & Buunk, 1993).

Commitment processes

Commitment is a central process across theories of relationship science (Rusbult & Buunk, 1993). Commitment has been operationalized as a subjective feeling of investment, dependence, and long-term orientation toward the relationship and one's partner (Rusbult & Buunk, 1993). Greater commitment has been associated with higher levels of relationship satisfaction, fewer perceptions of alternatives, and more investment in the

relationship (Rusbult et al., 1998). Commitment is associated with relationship stability across a range of relationship types including dating and married couples (Le & Agnew, 2003). Importantly, greater levels of commitment are associated with greater relationship maintenance behaviors (Dindia, 2000), which may be particularly important when coping with interpersonal stigma.

Interpersonal stigma

A burgeoning body of research has demonstrated that interpersonal stigma, including rejection and harassment, is associated with lower relationship quality and higher levels of psychological distress for individuals in marginalized relationships (Gamarel et al., 2014; Lehmiller & Agnew, 2006; Rosenthal & Starks, 2015). Following Rusbult's (1980) investment model of commitment, Lehmiller and Agnew (2006) theorized that couples in which one or both partners were a member of a stigmatized group would be socially devalued on the basis of their relationship, which could then contribute to a decreased investment in the relationship and diminished commitment to the relationship. Studies with same-sex couples have demonstrated associations between interpersonal stigma and decreased satisfaction, quality, trust, and commitment (Doyle & Molix, 2015; Frost, 2011; Meyer & Frost, 2013; Rostosky, Riggle, Gray, & Hatton, 2007); however, this pattern of associations has not yet been extended to couples comprised of transgender and cisgender male partners.

Accumulating evidence illustrates that transgender women experience more frequent pervasive interpersonal stigma (Bockting, Miner, Swinburne, Hamilton, & Coleman, 2013; Clements-Nolle, Marx, & Katz, 2006; Gleason et al., 2016; Hatzenbuehler, Phelan, & Link, 2013). Numerous studies have shown that interpersonal stigma is associated with psychological distress among transgender women, such as anxious and depressive symptoms (Hughto-White, Reisner, & Pachankis, 2015; Jefferson, Neilands, & Sevelius, 2014; Reisner, White Hughto, Gamarel, et al., 2016). Although primary cisgender male partners of transgender women are an understudied population, research demonstrates high levels of stigma as a result of being in a romantic relationship with a transgender woman (Gamarel et al., 2014; Reisner, Gamarel, Nemoto, & Operario, 2014).

Within the context of a romantic relationship, cisgender male partners of transgender women may experience interpersonal stigma due to their partner's gender identity. Goffman (1963) referred to this as stigma by association, which is defined as experiencing negative consequences, such as harassment and violence, as a result of being in a relationship with a member of a stigmatized group (Neuberg, Smith, Hoffman, & Russell, 1994; Swim, Ferguson, & Hyers, 1999). Stigma by association has been linked to experiences of ostracism, exclusion, isolation, and social aversion (Angermeyer, Schulze, & Dietrich, 2003; Corrigan et al., 2006) and has been associated with negative mental health conditions such as depression, anxiety, and suicidal ideation (Bogart et al., 2008; Larson & Corrigan, 2008). For example, studies of caregivers of people living with HIV have found statistical associations between experiences of stigma by association and adverse mental health outcomes (Mitchell & Knowlton, 2009; Wight, Aneshensel, Murphy, Miller-Martinez, & Beals, 2006; Wight, Beals, Miller-Martinez, Murphy, & Aneshensel, 2007). Additionally, studies have found that stigma by association is

associated with lower relationship quality, as well as greater levels of psychological distress and substance use, among cisgender males in a romantic partnership with transgender women (Gamarel et al., 2014; Reisner et al., 2014).

Although a growing body of research has demonstrated associations between interpersonal stigma, relationship problems, and poor health outcomes for individuals in marginalized relationships (Gamarel et al., 2014; Lehmiller & Agnew, 2006; Reisner et al., 2014; Rosenthal & Starks, 2015), qualitative studies illustrate that interpersonal stigma can also serve as an opportunity to enhance or redefine commitment (Frost, 2011; Rostosky, Riggle, Dudley, & Comer Wright, 2006; Rostosky et al., 2007). For example, qualitative evidence suggests that some same-sex couples utilize relationship maintenance behaviors, such as reframing negative experiences and affirming their relationship, when they experience interpersonal stigma (Frost, 2011; Rostosky et al., 2006; Rostosky et al., 2007). Building from these qualitative insights, quantitative studies are warranted to measure whether commitment may offset the negative associations between interpersonal stigma and mental health outcomes among individuals in marginalized relationships.

Interdependence theory (Rusbult & Buunk, 1993; Thibaut & Kelly, 1959), and its application to couples' health (Lewis et al., 2006), describes how commitment is a process whereby, over time, partners coordinate their thoughts and behaviors to achieve beneficial outcomes for the relationship. That is, committed couples engage in behaviors for their partner and their relationship rather than solely for their own individual goals or self-interest (Rusbult & Buunk, 1993; Thibaut & Kelly, 1959). Romantic partners inevitably confront dilemmas, which typically entail cost or effort on the part of one or both partners. In the face of dilemmas, committed individuals are likely to persist in their relationships and engage in relationship maintenance behaviors whereby they may set aside their own immediate self-interests for the benefit of their relationship and their partner (Drigotas, Rusbult, & Verette, 1999; Holmes, 1981; Kelley & Thibaut, 1978). Individuals who are high in commitment have been shown to engage in and perceive relationship maintenance behaviors that preserve or prevent declines in existing levels of intimacy (Dindia, 2000). Thus, individuals who are high in commitment may engage in relationship maintenance behaviors, which may offset the associations between interpersonal stigma and negative health outcomes in marginalized relationships.

The current study

The current study sought to build on and extend this body of literature to explore the associations between interpersonal stigma and psychological distress in a sample of transgender women and their cisgender male partners as well as to examine whether commitment level moderates the associations between interpersonal stigma and psychological distress. The aims of this study were twofold: (a) to examine the association between interpersonal stigma and both anxious and depressive symptoms of transgender women and their cisgender male partners and (b) to identify whether commitment moderates the associations between interpersonal stigma and anxious and depressive symptoms. We hypothesized that more frequent reports of interpersonal stigma would be associated with elevated of anxious and depressive symptoms within individuals.

Additionally, we hypothesized that high levels of interpersonal stigma would be associated with greater anxious and depressive symptoms among their partners. That is, we hypothesized that interpersonal stigma would have a partner effect and be associated with greater psychological distress among the partners. Finally, we hypothesized that commitment would moderate the associations between interpersonal stigma and psychological distress. Specifically, we hypothesized that partners who reported higher levels of commitment would report lower levels of anxious and depressive symptoms, regardless of whether they experienced interpersonal stigma compared to individuals with low levels of commitment. To achieve these aims, we analyzed data from a cross-sectional study of 191 couples comprising transgender women and their cisgender male partners, from which we have previously published findings about the negative associations between interpersonal stigma and health (Gamarel et al., 2014). The current investigation extends the previous findings to focus on whether commitment moderates the association between interpersonal stigma and psychological distress, as a potential target for future intervention and to guide health promotion efforts for these partnerships.

Method

Participants

Participants were 191 couples comprising transgender women and their cisgender primary male partners (Operario, Nemoto, Iwamoto, & Moore, 2011). Couples were recruited from the San Francisco Bay Area of California using purposive sampling methods (Shadish, Cook, & Campbell, 2004) by identifying a range of community spaces and venues where transgender women and cisgender male partners of transgender women congregate (e.g., community-based organizations, bars, and nightclubs) and posting flyers. Couples who called the study were screened separately for eligibility criteria. Eligible participants were scheduled for an in-person interview at the research center or a conveniently located confidential space at a community-based organization. Both partners were required to attend the appointment together but were consented and completed the survey separately.

To be eligible, both partners must have reported each other as their primary intimate partner for at least 3 months, defined as a "partner to whom you feel committed above anyone else and with whom you have had a sexual relationship." We included couples in which one partner in each couple identified as a transgender woman (i.e., assigned a male sex at birth who identifies as female) and the other partner identified as a cisgender male (i.e., nontransgender; assigned a male sex at birth who identifies as male). In addition, all participants were (1) at least 18 years old; (2) living or working in the San Francisco Bay Area; (3) English- or Spanish-speaking; and (4) able to provide informed consent. Data for this analysis were collected between November 2008 and November 2010.

Procedures

Surveys were administered to participants using audio computer-assisted self-interview technology. Survey items were translated into Spanish, but Spanish version surveys were

administered on paper; five monolingual Spanish participants completed the Spanish survey. Surveys took approximately 1 hr to complete, and the participants received US$50 reimbursement and a brochure with a list of local community organizations addressing transgender issues. Procedures were approved by the Institutional Review Boards at the Public Health Institute, Oakland, CA, USA; University of California, San Francisco, CA, USA; and University of Oxford, Oxford, U.K.

Measures

Sociodemographics. Participants reported their age, gender, race and ethnicity, HIV serostatus (positive or negative/unknown), education level, and financial hardship (categorized as greater than or equal to US$500 a month vs. US$499 or less a month). Participants also provided the duration of the primary relationship (in months).

Depressive symptoms, anxious symptoms, interpersonal stigma, and commitment. Four scales were used to assess the constructs of depressive symptoms, anxious symptoms, interpersonal stigma, and commitment in this study (see below). Psychometric evaluation of scales was conducted for transgender women and male partners separately to account for the dependence in the data. We conducted a series of confirmatory factor analyses (CFAs) on each of the scales to confirm a single-factor solution representing the scale construct. The χ^2 model fit criterion can lead to erroneous conclusions with criterion sensitivity to large samples and has a tendency to indicate a significant probability level as the sample size increases; therefore, approximate fit was assessed using a combination of Bentler's comparative fit index (CFI; Bentler & Bonnett, 1980), the root mean square error of approximation (RMSEA; Browne & Cudek, 1993), and the weighted root mean square residual (WRMR; Yu & Muthen, 2002). Satisfactory approximate fit occurred when two of the three following criteria were met: CFI $\geq$ .95, RMSEA $\leq$ .06, and WRMR $\leq$ 1.00 (Hu & Bentler, 1999). Reliability for each scale was assessed using Cronbach's α. The results of CFAs and α are presented in the description of each scale below.

Depressive symptoms. The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) was administered to measure depressed mood in the past week. The CES-D consists of 20 items (i.e., "could not get going"). Participants responded on a 4-point scale ranging from 1 = *rarely or none of the time* to 4 = *most or all of the time*. Previous studies have demonstrated that the scale has good psychometric properties in lesbian, gay, bisexual, and transgender (LGBT) samples (Operario et al., 2011; Wong, Schrager, Holloway, Meyer, & Kipke, 2014). Results of the CFA suggested that this one-factor model provided acceptable fit to the data for transgender women, $\chi^2(25, N = 195) = 270.15, p < .001$, CFI = .96, RMSEA = .02, WRMR = .95, as well as for cisgender male partners, $\chi^2(25, N = 195) = 251.95, p < .001$, CFI = .95, RMSEA = .03, WRMR = 1.11. Internal consistency reliability for composite scores on the CES-D was good for both transgender women (α = .88) and their cisgender male partners within our sample (α = .85).

Anxious symptoms. Anxiety was measured using the 6-item anxiety subscale of the Brief Symptom Inventory (Derogatis & Savitz, 1999) measured with a 5-item Likert-type

scale (i.e., "In the past week, how much have you been bothered by nervousness or shakiness inside?"). This measure of anxiety has been used in previous studies involving transgender women (Mustanski, Garofalo, & Emerson, 2010; Sánchez & Vilain, 2009). Results of the CFA suggested that this one-factor model provided acceptable fit to the data for transgender women, $\chi^2(9, N = 195) = 73.92$, $p < .001$, CFI = .92, RMSEA = .04, WRMR = .94, as well as for cisgender male partners, $\chi^2(9, N = 195) = 17.19$, $p = .046$, CFI = .98, RMSEA = .07, WRMR = .92. Internal consistency reliability for the composite anxiety subscale was good for both transgender women ($\alpha = .92$) and their cisgender male partners in our sample ($\alpha = .88$).

Interpersonal stigma. The Everyday Discrimination Scale (Williams, Yu, Jackson, & Anderson, 1997) was adapted to assess interpersonal stigma experiences that participants attribute to being a transgender woman (i.e., "In your general day-to-day life, how often are you treated with less respect *because you are a transgender woman?*"). Similarly, their cisgender male partners were asked about their experiences of interpersonal stigma as a result of being in a relationship with a transgender woman (i.e., "In your general day-to-day life, how often have you been called names *because you are in a relationship with a transgender woman?*"). Response options ranged from 0 = *never* to 4 = *always*. Results of the CFA suggested that this one-factor model provided acceptable fit to the data for transgender women, $\chi^2(27, N = 195) = 206.95$, $p < .001$, CFI = .95, RMSEA = .09, WRMR = .95, as well as for cisgender male partners, $\chi^2(27, N = 195) = 141.95$, $p < .001$, CFI = .89, RMSEA = .05, WRMR = .94. Additionally, the scale demonstrated good internal consistency reliability for transgender women ($\alpha = .95$) and their male partners in this sample ($\alpha = .92$).

Commitment. Relationship commitment was assessed using an adapted form of the Commitment subscale of the Triangular Theory of Love Scales (Tzeng, 1993). The measure included 8 items (e.g., "I am committed to maintaining my relationship with my partner"). Results of the CFA suggested that this one-factor model provided acceptable fit to the data for transgender women, $\chi^2(20, N = 195) = 69.24$, $p < 0.001$, CFI = .97, RMSEA = .08, WRMR = .83, as well as for cisgender male partners, $\chi^2(20, N = 195) = 93.63$, $p < .001$, CFI = .95, RMSEA = .05, WRMR = .93. The scale also demonstrated good internal consistency for both transgender women ($\alpha = .95$) and their male partners in this sample ($\alpha = .95$).

Statistical analysis

Data from transgender women and their cisgender male partners are considered non-independent because each partner most likely influences their other partners' health and well-being. Therefore, analyses followed procedures for dyadic data analysis described by Kenny, Kashy, and Cook (2006). Transgender women and their cisgender male partners represent distinguishable dyads. Within each dyad, partners differ with regard to gender, and gender has potentially meaningful implications for the theoretical constructs examined. Descriptive statistics such as frequency distributions or means and standard deviations were obtained to summarize demographic characteristics, interpersonal

stigma, commitment, anxious symptoms, and depressive symptoms for both transgender women and their cisgender male primary partners. Next, we examined bivariate differences between transgender women and their cisgender male partners using *t*-tests and χ^2 tests. We then used Pearson correlation and Spearman rank-order correlation coefficients to examine bivariate associations between each partners' reports of interpersonal stigma, commitment, anxious symptoms, and depressive symptoms, as well as demographic characteristics.

Models examining the association between interpersonal stigma, commitment, and their interaction on anxious symptoms and depressive symptoms were conceptualized using the actor–partner interdependence model (APIM; Kenny, Kashy, & Cook, 2006). APIMs are models that account for the organization of individuals within dyads and allow for the examination of the associations between interpersonal stigma and psychological distress for the individual as well as the partner effect on the other member of the couple. Two types of effects are examined: *actor effects* in which an individual's own value on a measure is used to examine the associations between his/her own score on the dependent variable and *partner effects* in which an individual's score on a measure is used to examine the associations between his/her partner's score on the dependent variable. For example, transgender women's interpersonal stigma scores can be associated with her own anxious symptom scores (i.e., an actor effect), and her partner's interpersonal stigma scores can be associated with her anxious symptom scores (i.e., a partner effect). Additionally, we included interaction terms to examine whether commitment moderated the associations between interpersonal stigma and psychological distress. Finally, significant moderation effects (as demonstrated by a significant interaction effect between interpersonal stigma and commitment) were plotted and examined by means of simple slope tests, using the range of the interpersonal stigma variables from 1 *SD* below and above the mean as outlined by Aiken and West (1991). We present three model fit indices to examine adequate model fit to these data: (1) the goodness of fit index (GFI), (2) the confirmatory fit index (CFI), and (3) the RMSEA. For the GFI, values >.90; for the CFI, values >.95; and for the RMSEA measure, values <.06 indicate adequate model fit to the data (Hu & Bentler, 1999). All models were statistically adjusted for relationship duration (in months) to examine the effects of commitment over and above the time couples had been together. We also statistically adjusted for demographic variables that were associated with our primary independent variables in bivariate analyses as well as demographic variables that may confound the associations between interpersonal stigma, commitment, and anxious and depressive symptoms. Specifically, low income has been associated with lower mental health functioning among transgender women and their cisgender male partners (Gamarel et al., 2014). Additionally, there may be generational differences based on couples' ages as a result of increasing visibility of transgender people (White Hughto, Reisner, & Pachankis, 2015). Given that depressive and anxious symptoms were highly correlated in our sample, we included them in APIMs to examine the associations between interpersonal stigma and commitment on each mental health outcome over and above potential covariates. All CFA and APIM analyses were conducted using a structural equation modeling approach in Mplus 7.0 (Muthén & Muthén, 2010). Descriptive statistics and bivariate analyses were conducted using SPSS version 24.

Table 1. Overall sample ($N = 382$) and couple-level bivariate associations for categorical variables ($N = 191$).

	Transgender women	Male partners		
	N (%)	*N* (%)	Test statistic	*K*
Race/ethnicity			$\chi^2(4) = 32.17$***	.27***
Asian	40 (20.9)	8 (4.2)		
Black	42 (22.0)	65 (34.0)		
Latina	40 (20.9)	33 (17.3)		
White	30 (15.7)	50 (26.2)		
Mixed/other	39 (20.4)	35 (18.3)		
Education attainment			$\chi^2(3) = 4.62$	.06
Less than HS	35 (18.5)	46 (24.2)		
HS or GED	72 (38.1)	63 (33.2)		
Some college	62 (32.8)	52 (27.4)		
College or more	20 (10.6)	28 (15.3)		
Financial hardship			$\chi^2(1) = 0.08$	.25***
<US$500 last month	118 (62.4)	116 (61.1)		
>US$500 last month	71 (37.6)	74 (38.9)		
HIV status			$\chi^2(1) = 21.58$***	.28***
HIV-positive	35 (18.3)	75 (39.5)		
HIV-negative	156 (81.7)	116 (60.7)		

Note. HIV = human immunodeficiency virus; HS = High School; GED = General Education Diploma.
*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

Results

Descriptive statistics and bivariate analyses for categorical variables using χ^2 tests for transgender women and their cisgender male partners, along with κ statistics, are presented in Table 1. Descriptive statistics and bivariate analyses for continuous variables for transgender women and their cisgender male partners using *t*-tests, along with intraclass correlation coefficients (ICCs), are presented in Table 2. As presented in Table 1, there were significant differences in race/ethnicity by gender identity such that a greater proportion of transgender women identified as Asian and Latina compared with cisgender male partners; in contrast, a greater proportion of cisgender male partners self-identified as Black and White compared with transgender women. Additionally, a higher proportion of

Table 2. Overall Sample ($N = 382$) and couple-level bivariate associations for continuous variables ($N = 191$).

	Transgender women *M* (*SD*)	Male partners *M* (*SD*)	Test Statistic	ICC
Age	36.32 (10.82)	37.92 (11.65)	$t(190) = 2.11$*	.51***
Interpersonal stigma	10.55 (7.92)	11.34 (8.56)	$t(190) = 0.81$	−.01
Commitment	59.22 (14.61)	59.62 (14.93)	$t(190) = -0.28$	0.15*
Anxious symptoms	10.23 (4.51)	10.79 (5.55)	$t(190) = -1.08$	0.01
Depressive symptoms	16.25 (11.79)	17.03 (11.28)	$t(190) = -0.66$	0.03

Note. ICC = intraclass correlation coefficient; SD = standard deviation. Means and SDs are based on untransformed variables.
*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

transgender women self-reported an HIV-negative status compared with cisgender male partners. As shown in Table 2, there were no significant differences between transgender women and their cisgender male partners on reports of interpersonal stigma, commitment, and mental health symptoms; however, cisgender male partners were significantly older than transgender women.

Table 3 presents the bivariate correlations between all study variables. In bivariate analyses, transgender women's interpersonal stigma scores were inversely associated with their own commitment scores and positively correlated with their own reports of anxious symptoms and depressive symptoms. For cisgender male partners, more frequent experiences of interpersonal stigma were inversely associated with their own commitment scores and positively associated with their own reports of anxious symptoms and depressive symptoms. Furthermore, among cisgender male partners, more frequent experiences of interpersonal stigma were associated with their partners' higher reports of anxious symptoms ($r = .17$, $p < .05$). Additionally, older age among transgender women was associated with higher reports of depressive symptoms, and among cisgender male partners, greater financial hardship (earning less than US$500 monthly) was positively associated with depressive symptoms.

Transgender women's and their cisgender male partners' anxious symptoms were regressed on their reports of interpersonal stigma, commitment, and the interaction between interpersonal stigma and commitment using APIMs, statistically adjusting for age, financial hardship, and relationship duration. As shown in Table 4, there were significant associations between cisgender male partners' reports of interpersonal stigma and anxious symptoms (actor effects). Similarly, there were significant partner effects for interpersonal stigma on both partners' reports of anxious symptoms. The interaction between actor interpersonal stigma and actor commitment on anxious symptoms was significant for transgender women but not for their cisgender male partners. The fit of the model was satisfactory: GFI = .91, CFI = .98, and RMSEA = .04. As shown in Figure 1, the interaction term indicated that the association between interpersonal stigma and anxious symptoms was stronger among transgender women who reported low levels of commitment ($\beta = -.34, p = .021$) compared with transgender women who reported high levels of commitment ($\beta = .20, p = .034$).

Table 3. Bivariate correlations between study variables ($N = 191$ couples).

	1	2	3	4	5	6	7	8	9	10
1. Interpersonal stigma	—	−0.35***	0.40***	0.45***	−0.03	−0.05	0.05	−0.02	−0.07	−0.02
2. Commitment	−0.03	—	−0.30***	−0.46***	−0.03	−0.04	−0.11	0.12	0.08	0.09
3. Anxious symptoms	0.42***	−0.14	—	0.70***	0.05	−0.06	−0.07	−0.04	−0.13	−0.02
4. Depressive symptoms	0.33***	−0.11	0.72***	—	−0.02	−0.11	−0.11	0.22**	−0.05	−0.07
5. Age	−0.03	0.01	−0.11	0.16*	—	0.00	0.13	0.03	−0.21*	0.34***
6. Race/ethnicity	−0.03	−0.05	−0.11	−0.10	0.07	—	−0.03	0.04	−0.07	−0.02
7. Educational attainment	0.01	−0.03	0.04	−0.01	0.05	0.04	—	0.16*	−0.08	−0.08
8. Financial hardship	−0.08	−0.01	−0.01	−0.04	0.05	−0.02	0.17*	—	0.13	0.06
9. HIV status	0.06	−0.08	0.04	−0.06	−0.21**	0.01	0.01	−0.05	—	−0.21**
10. Relationship length	0.01	−0.01	0.09	0.07	0.17*	−0.07	−0.05	0.09	−0.09	—

Note. HIV = human immunodeficiency virus. Correlations for transgender women appear below the diagonal; correlations for cisgender male partners appear above the diagonal.

Table 4. Associations between interpersonal stigma, commitment, and anxious symptoms (N = 191 couples).

	Transgender women			Male partners		
	β	*SE*	*p* Value	β	*SE*	*p* Value
Actor effects						
Primary independent variable						
Interpersonal stigma	.10	.05	.071	.22	.05	.000
Commitment	.03	.06	.629	−.04	.12	.729
Stigma × Commitment	−.18	.05	.000	.03	.05	.553
Covariates						
Depressive symptoms	.69	.06	.000	.64	.04	.000
Age	−.05	.06	.371	.02	.06	.773
Low income	.10	.05	.042	.20	.12	.015
Partner effects						
Primary independent variable:						
Interpersonal stigma	.18	.05	.001	.18	.05	.001
Commitment	.15	.12	.202	−.02	.06	.667
Stigma × Commitment	−.12	.05	.220	.01	.05	.882
Covariates						
Depressive symptoms	.03	.05	.623	.09	.06	.147
Age	.19	.06	.001	−.11	.06	.051
Low income	.26	.12	.025	.06	.05	.253
Couple-level factors						
Relationship length	−.03	.05	.593	.09	.05	.079

Note. SE = standard error.

Table 5 presents the results for the APIM examining associations between interpersonal stigma, commitment, and depressive symptoms. Results were similar to the APIM for anxious symptoms. The fit of the model was satisfactory: GFI = .93, CFI = .97, and RMSEA = .05. As shown in Figure 2, the interaction term indicated that the interpersonal stigma was significantly associated with greater depressive symptoms among transgender women who reported low levels of commitment ($\beta = .44$, $p < .05$); however, interpersonal stigma was not significantly associated with depressive symptoms among transgender women who reported high levels of commitment ($\beta = .05$, $p = .648$).

Discussion

Despite the importance of commitment in couples' health and overall well-being (Lehmiller & Agnew, 2006; Rusbult, 1983), to our knowledge, no research to date has investigated whether commitment may buffer or offset the negative associations between interpersonal stigma and mental health symptoms. Consistent with prior research (Gamarel et al., 2014), this study found actor effects such that transgender women's reports of interpersonal stigma were associated with greater depressive symptoms and that their cisgender male partner's reports of interpersonal stigma were associated with elevated anxious symptoms. Furthermore, we found evidence of

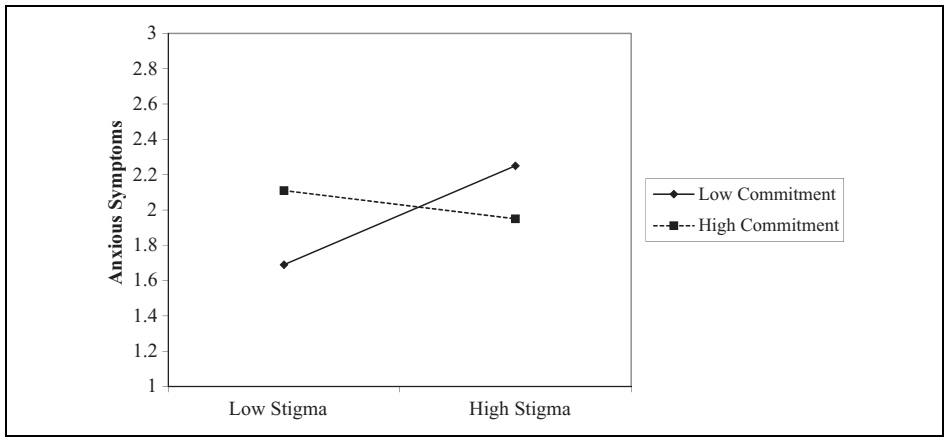

Figure 1. Actor effects of commitment moderating effect of interpersonal stigma on anxious symptoms for transgender women.

Table 5. Associations between interpersonal stigma, commitment, and depressive symptoms ($N = 191$ couples).

	Transgender women			Male partners		
	β	*SE*	*p* Value	β	*SE*	*p* Value
Actor effects						
Primary independent variable						
Interpersonal stigma	.13	.05	.009	.01	.06	.952
Commitment	−.18	.05	.002	−.01	.06	.922
Stigma × Commitment	−.12	.05	.009	.01	.06	.902
Covariates						
Anxious symptoms	.62	.05	.000	.72	.05	.000
Age	.03	.06	.626	−.11	.06	.073
Low income	.10	.05	.000	.21	.13	.097
Partner effects						
Primary independent variable						
Interpersonal stigma	.18	.05	.001	.12	.06	.041
Commitment	−.12	.11	.283	.08	.06	.144
Stigma × Commitment	.04	.05	.424	−.05	.05	.316
Covariates						
Anxious symptoms	.09	.05	.068	.06	.06	.357
Age	−.08	.06	.163	.08	.06	.183
Low income	.26	.11	.018	−.05	.05	.306
Couple-level factors						
Relationship length	−.01	.05	.777	−.01	.06	.867

Note. SE = standard error.

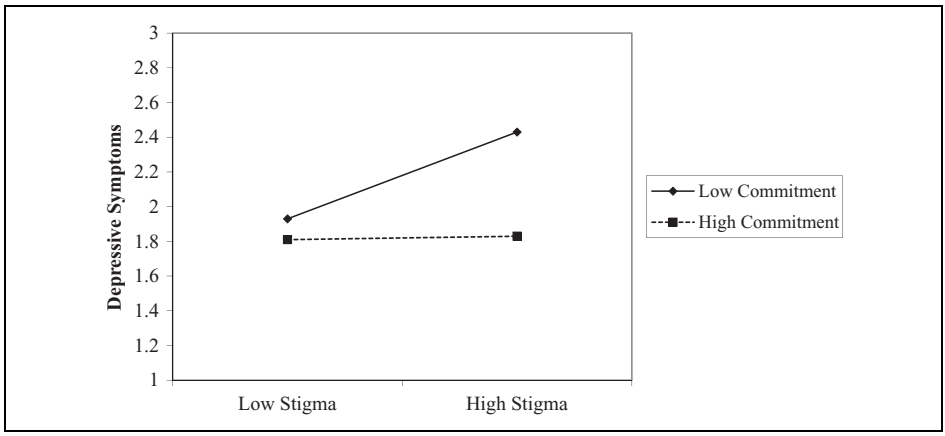

Figure 2. Actor effects of commitment moderating effect of interpersonal stigma on depressive symptoms for transgender women.

partner effects such that more frequent reports of interpersonal stigma experienced by transgender women were associated with elevated anxious and depressive symptoms reported by their cisgender male partners; similarly, higher interpersonal stigma experienced by cisgender men was associated with elevated anxious and depressive symptoms reported by their transgender women partners. We also found that greater commitment reduced the associations between interpersonal stigma and psychological distress (i.e., anxious and depressive symptoms scores) for transgender women, but not for their cisgender male partners.

Findings from the current study, including the high frequency of interpersonal stigma reported by transgender women in our sample, provide evidence that transgender women are ostracized and victimized as a result of their gender identity (Nemoto, Bödeker, & Iwamoto, 2011). Transgender women who experienced interpersonal stigma and who were high in commitment had lower psychological distress compared with those with low commitment. Research has shown that many individuals with high levels of commitment are motivated to engage in relationship maintenance behaviors (Canary, Stafford, & Semic, 2002; Stafford & Canary, 1991). Prior research has found that individuals in marginalized relationships often engage in relationship maintenance behaviors, such as open communication, and draw on social networks in the face of interpersonal stigma (Frost, 2011; Rotosky, Riggle, Dudley, & Comer Wright, 2006). Thus, it is plausible that transgender women who are high in commitment may engage in relationship maintenance behaviors, which may buffer them from interpersonal stigma and sustain their relationship.

It is also possible that transgender women internalize traditional societal feminine norms associated with being a woman (Hoskin, Jenson, & Blair, 2017). Internalizing patriarchal norms of femininity may produce dependence upon their male partner for acceptance, love, and gender-related validation or affirmation (Sevelius, 2013). To the extent that their relationships with cisgender male partners fulfill their basic needs for love and acceptance, feelings of commitment may offset adverse mental health outcomes

(Le & Agnew, 2003). Future research is warranted to understand how internalization of patriarchal norms of femininity is related to commitment levels and relationship maintenance behaviors to explore how commitment may buffer associations between interpersonal stigma and psychological distress for transgender women.

Contrary to our hypotheses, commitment did not moderate the associations between interpersonal stigma and psychological distress for cisgender male partners. Interpersonal stigma may reduce commitment among individuals in marginalized relationships (Sawyer, Major, Casad, Townsend, & Mendes, 2012). In bivariate analyses, there was a negative correlation between interpersonal stigma and commitment, suggesting that more frequent experiences of interpersonal stigma due to being in a relationship with a transgender woman may be associated with cisgender male partners feeling less committed to their relationship. The "wear and tear" of chronic everyday interpersonal stigma experiences may be associated with male partners deploying avoidance strategies, such as disengaging from commitment. Further, sources of social support that are normally available to these cisgender males, such as friends and family members, may not support or understand their relationship with their transgender partner. Because the stigma they experience is a result of their partner's stigmatized identity, they may not have access to support for their relationship or for coping with interpersonal stigma by association. Further research is necessary to examine these gender-specific pathways as potential explanations for our findings.

In addition, internalized heteronormativity may also be a contributing factor in understanding why commitment did not moderate the associations between experiences of interpersonal stigma due to being in a relationship with a transgender person and psychological distress for cisgender male partners. For those cisgender men who are partnered with transgender women and do not identify with the LGBT community and/or identify as straight or heterosexual, the associations between interpersonal stigma and psychological distress may not be reduced by levels of commitment, because the relationship itself is the source of the stigma. In these cases, interpersonal stigma may disaffirm the male partner's identity, further exacerbating negative mental health effects of the experience of stigma itself (Operario, Burton, Underhill, & Sevelius, 2008). Future research is needed to understand the sources and types of support that cisgender male partners of transgender women use in the face of stigma. Additionally, research is needed to better understand whether and how interpersonal stigma from different sources may impact relationship and health outcomes in order to guide future interventions and clinical practice.

Study findings also suggest that there may be differential associations between interpersonal stigma and anxious versus depressive symptoms for transgender women and their cisgender male partners. Specifically, we found that transgender women's reports of interpersonal stigma were associated with greater depressive symptoms; cisgender male partner's reports of interpersonal stigma were associated with greater anxious symptoms. It is plausible that cisgender male partners who experience stigma due to their relationship with a member of a stigmatized group may fear rejection and attempt to avoid situations in which others may learn about their partner's identity (Pachankis, 2008). Constantly fearing rejection and avoiding situations may lead to isolation and anxiety (Pachankis, 2008), as well as difficulties communicating with their

partner about their thoughts and emotions, which may produce greater anxiety (Manne, Badr, Zaider, Nelson, & Kissane, 2010; Randall & Bodenmann, 2009).

Notably, we did not find any significant partner effects for commitment. Transgender women's own feelings of relationship commitment may be most important in offsetting the associations between their experiences of interpersonal stigma and psychological distress. Research also suggests that perceptions of relationship factors may be more predictive of better health outcomes than partners' actual feelings and behaviors (Reis, 2012; Selcuk & Ong, 2013). For example, partners who are perceived as highly responsive may be more likely to engage in supportive behaviors that fulfill their partner's needs (Collins, Guichard, Ford, & Feeney, 2006). Future studies using intensive longitudinal designs have the potential to identify whether perceptions of commitment versus partners' actual commitment level, as well as relational maintenance and supportive behaviors, mediate the associations between interpersonal stigma and psychological distress for both transgender women and their cisgender male partners.

Finally, we found evidence of partner effects such that greater levels of interpersonal stigma were associated with greater anxious and depressive symptoms reported by the partners. These findings are consistent with prior research (Gamarel et al., 2014), supporting the partner effect of interpersonal stigma in romantic couples. The reciprocal influence of interpersonal stigma on both partners' reports of anxious and depressive symptoms has the potential to negatively affect their partner's mental health (Randall & Bodenmann, 2009). Experiencing interpersonal stigma may result in conflict and strain on couples, which can produce isolation and inhibit support and communication (Rostosky et al., 2007). Thus, this field of study would benefit from investigating the ways that potential relationship maintenance and support behaviors (e.g., joint problem-solving and open communication) may mediate the associations between interpersonal stigma and psychological distress for both partners in the relationship.

Limitations

Several limitations must be noted when interpreting our findings. This study relies on self-report data which may be subject to social desirability. Due to the cross-sectional study design, causal or temporal claims cannot be drawn. Moreover, participants were recruited from a specific geographic area with a history of social and legal protections against transgender-specific stigma and where there are many safe spaces for transgender individuals. As such, these findings may not be generalizable to couples in other geographic regions and settings. The effects of interpersonal stigma compared with the effects of anxious symptoms on depressive symptoms and vice versa were relatively small in APIM analyses. However, these findings can inform future research to determine whether different measures of commitment (e.g., Rusbult, Martz, & Agnew, 1998), along with other general experiences of stress (e.g., perceived general stress), may produce differential effects on mental health. Furthermore, we did not collect measures of relationship maintenance or other support behaviors, which is an important method to employ for future research. Lastly, an issue which the current study did not consider is the extent to which interpersonal stigma (or stigma by association) based on any specific

attribute (e.g., transgender) has distinct effects from other forms of unfair treatment (Williams & Mohammed, 2009); couples research would benefit from considering this issue further in the future.

Conclusions

Our findings extend prior research documenting the negative associations between interpersonal stigma and psychological distress among transgender women and their cisgender male partners. For transgender women, commitment buffered the association between interpersonal stigma and psychological distress, but this effect was not found for their cisgender male partners. These findings point to differential associations between commitment and mental health outcomes for people experiencing interpersonal stigma as a result of their own social identity versus their relationship with a member of a stigmatized group. Consequences and buffers of interpersonal stigma deserve further attention to inform clinical interventions. Furthermore, the persistent prejudice and stigma targeting transgender individuals remain significant societal challenges. Thus, mental health practitioners, health-care professionals, and researchers working with these communities must acknowledge the social and interpersonal determinants that affect health among members of these socially and economically marginalized groups.

Acknowledgements

We gratefully thank the couples who participated in the study; staff members; and colleagues Mariko Iwamoto, Lynae Darbes, and Colleen Hoff for their valuable feedback on this project.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research was supported by grants from the National Institutes of Health (NIH; R01DA018621, R34MH093232, and U24AA022000). This publication was supported (in part) by a developmental grant awarded to the principal investigator S.L.R. (CFAR-FCHC-15-1) by: (a) the Harvard University Center for AIDS Research, an NIH-funded program (P30 AI060354), which is supported by the following NIH co-funding and participating institutes and centers: National Institute of Allergy and Infectious Diseases (NIAID), National Cancer Institute (NCI), Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), National Heart, Lung, and Blood Institute (NHLBI), National Institute on Drug Abuse (NIDA), National Institute of Mental Health (NIMH), National Institute on Aging (NIA), Fogarty International Center (FIC), and Office of AIDS Research (OAR) and (b) the Harvard Global Health Institute.

References

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: SAGE.

Angermeyer, M. C., Schulze, B., & Dietrich, S. (2003). Courtesy Stigma. *Social Psychiatry and Psychiatric Epidemiology*, *38*, 593–602.

Bentler, P. M., & Bonnett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, *88*, 588–606.

Bockting, W. O., Miner, M. H., Swinburne, R. E., Hamilton, R. A., & Coleman, E. (2013). Stigma, mental health, and resilience in an online sample of the US transgender population. *American Journal of Public Health*, *103*, 943–951.

Bogart, L. M., Cowgill, B. O., Kennedy, D., Ryan, G., Murphy, D. A., Elijah, J., & Schuster, M. A. (2008). HIV-related stigma among people living with HIV and their families: A qualitative analysis. *AIDS and Behavior*, *12*(2), 244–254.

Browne, M. W., & Cudek, R. (1993). *Alternative ways of assessing model fit*. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 445–455). Newbury Park, CA: SAGE.

Canary, D., Stafford, L., & Semic, B. (2002). A panel study of the associations between maintenance strategies and relational characteristics. *Journal of Marriage and the Family*, *64*, 395–406.

Clements-Nolle, K., Marx, R., & Katz, M. (2006). Attempted suicide among transgender persons: The influence of gender-based discrimination and victimization. *Journal of Homosexuality*, *51*, 53–69.

Collins, N. L., Guichard, A. C., Ford, M. B., & Feeney, B. C. (2006). *Responding to need in intimate relationships: Normative processes and individual differences*. In M. Mikulincer & G. S. Goodman (Eds.), *Dynamics of romantic love: Attachment, caregiving, and sex* (pp. 149–189). New York, NY: Guilford Press.

Corrigan, P. W., Watson, A. C., & Miller, F. E. (2006). Blame, shame, and contamination: The impact of mental illness and drug dependence stigma on family members. *Journal of Family Psychology*, *20*(2), 239–246.

Derogatis, L. R., & Savitz, K. L. (1999). The SCL-90-R, brief symptom inventory, and matching clinical rating scales. In M. E. Maruish (Ed.), *The use of psychological testing for treatment planning and outcomes assessment* (pp. 679–724). Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.

Dindia, K. (2000). *Relational maintenance*. In C. Hendrick & S. S. Hendrick (Eds.), *Close relationships: A Sourcebook* (pp. 287–299). Thousand Oaks, CA: SAGE.

Doyle, D. M., & Molix, L. (2015). Social stigma and sexual minorities' romantic relationship functioning: A meta-analytic review. *Personality and Social Psychology Bulletin*, *41*, 1363–1381.

Drigotas, S. M., Rusbult, C. E., & Verette, J. (1999). Level of commitment, mutuality of commitment, and couple well-being. *Personal Relationships*, *6*, 389–409.

Frost, D. M. (2011). Social stigma and its consequences for the socially stigmatized. *Social and Personality Psychology Compass*, *5*, 824–839.

Gamarel, K. E., Reisner, S. L., Laurenceau, J. P., Nemoto, T., & Operario, D. (2014). Gender minority stress, mental health, and relationship quality: A dyadic investigation of transgender women and their cisgender male partners. *Journal of Family Psychology*, *4*, 437–447.

Gleason, H. A., Livingston, N. A., Peters, M. M., Oost, K. M., Reely, E., & Cochran, B. N. (2016). Effects of state nondiscrimination laws on transgender and gender-nonconforming individuals' perceived community stigma and mental health. *Journal of Gay & Lesbian Mental Health*, *20*, 350–362.

Goffman, E. (1963). *Stigma: Notes on the management of spoiled identity*. Englewood Cliffs, NJ: Spectrum.

Hatzenbuehler, M. L., Phelan, J. C., & Link, B. G. (2013). Stigma as a fundamental cause of population health inequalities. *American Journal of Public Health*, *103*, 813–821.

Holmes, J. G. (1981). *The exchange process in close relationships: Microbehavior and macromotives*. In M. J. Lerner & S. C. Lerner (Eds.), *The justice motive in social behavior* (pp. 261–284). New York, NY: Plenum Press.

Hoskin, R. A., Jenson, K. E., & Blair, K. L. (2017). Is our feminism bullshit? The importance of intersectionality in adopting a feminist identity. *Cogent Social Sciences*, *3*, 1290014.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indices in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*, 1–55.

Jefferson, K., Neilands, T., & Sevelius, J. (2014). Transgender women of color: discrimination and depression symptoms. *Ethnicity and Inequalities in Health and Social Care*, *6*, 121–136.

Kelley, H. H., & Thibaut, J. W. (1978). *Interpersonal relations: A theory of interdependence*. New York, NY: Wiley.

Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). *Dyadic data analysis*. New York, NY: The Guilford Press.

Kiecolt-Glaser, J. K., Loving, T. J., Stowell, J. R., Malarkey, W. B., Lemeshow, S., Dickinson, S. L., et al. (2005). Hostile marital interactions, proinflammatory cytokinem production, and wound healing. *Archives of General Psychiatry*, *62*, 1377–1384.

Larson, J. E., & Corrigan, P. (2008). The stigma of families with mental illness. *Academic Psychiatry*, *32*(2), 87–91.

Le, B., & Agnew, C. R. (2003). Commitment and its theorized determinants: A meta-analysis of the investment model. *Personal Relationships*, *10*, 37–57.

Lehmiller, J. J., & Agnew, C. R. (2006). Marginalized relationships: The impact of social disapproval on romantic relationship commitment. *Personality and Social Psychology Bulletin*, *32*, 40–51.

Lewis, M. A., McBride, C. M., Pollak, K. I., Puleo, E., Butterfield, R. M., & Emmons, K. M. (2006). Understanding health behavior change among couples: an interdependence and communal coping approach. *Social Science & Medicine*, *62*, 1369–1380.

Link, B. G., & Phelan, J. C. (2001). Conceptualizing stigma. *Annual Review of Sociology*, *27*, 363–385.

Manne, S., Badr, H., Zaider, T., Nelson, C., & Kissane, D. (2010). Cancer-related communication, relationship intimacy, and psychological distress among couples coping with localized prostate cancer. *Journal of Cancer Survivorship*, *4*, 74–85.

Meyer, I. H., & Frost, D. M. (2013). Minority stress and the health of sexual minorities. *Journal of Behavioral Medicine*, *38*, 1–8.

Mitchell, M. M., & Knowlton, A. (2009). Stigma, disclosure, and depressive symptoms among informal caregivers of people living with HIV/AIDS. *AIDS Patient Care and STDs*, *23*(8), 611–617.

Mustanski, B. S., Garofalo, R., & Emerson, E. M. (2010). Mental health disorders, psychological distress, and suicidality in a diverse sample of lesbian, gay, bisexual, and transgender youths. *American Journal of Public Health*, *100*, 2426–2432.

Muthén, B. O., & Muthén, L. (2010). *Mplus (Version 6.1) [Software]*. Los Angeles, CA: Author.

Nemoto, T., Bödeker, B., & Iwamoto, M. (2011). Social support, exposure to violence and transphobia, and correlates of depression among male-to-female transgender women with a history of sex work. *American Journal of Public Health*, *101*, 1980–1988.

Neuberg, S. L., Smith, D. M., Hoffman, J. C., & Russell, F. J. (1994). When we observed stigmatized and "normal" individuals interacting: Stigma by Association. *Personality and Social Psychology Bulletin*, *20*(2), 196–209.

Operario, D., Burton, J., Underhill, K., & Sevelius, J. (2008). Men who have sex with transgender women: Challenges to category-based HIV prevention. *AIDS and Behavior*, *12*, 18–26.

Operario, D., Nemoto, T., Iwamoto, M., & Moore, T. (2011). Unprotected sexual behavior and HIV risk in the context of primary partnerships for transgender women. *AIDS and Behavior*, *15*, 674–682.

Östman, M., & Kjellin, L. (2002). Stigma by association. *The British Journal of Psychiatry*, *181*, 494–498.

Oswald, R. F. (2002). Resilience within the family networks of lesbian and gay men: Intentionality and redefinition. *Journal of Marriage and Family*, *64*, 374–383.

Otis, M. D., Rostosky, S. S., Riggle, E. D., & Hamrin, R. (2006). Stress and relationship quality in same-sex couples. *Journal of Social and Personal Relationships*, *23*, 81–99.

Pachankis, J. E. (2008). The psychological implications of concealing a stigma: A cognitive-affective-behavioral model. *Psychological Bulletin*, *133*, 328–345.

Phelan, J. C., Link, B. G., & Dovidio, J. F. (2008). Stigma and prejudice: One animal or two? *Social Science and Medicine*, *67*, 358–367.

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*, 385–401.

Randall, A. K., & Bodenmann, G. (2009). The role of stress on close relationships and marital satisfaction. *Clinical Psychology Review*, *29*, 105–115.

Reis, H. T. (2012). *Perceived partner responsiveness as an organizing theme for the study of relationships and well-being*. In L. Campbell & T. J. Loving (Eds.), *Interdisciplinary research on close relationships: The case for integration* (pp. 27–52). Washington, DC: American Psychological Association.

Reisner, S. L., Gamarel, K. E., Nemoto, T., & Operario, D. (2014). Dyadic effects of gender minority stressors in substance use behaviors among transgender women and their non-transgender male partners. *Psychology of Sexual Orientation and Gender Diversity*, *1*, 63–71.

Reisner, S. L., White Hughto, J. M., Gamarel, K. E., Keuroghlian, A. S., Mizock, L., & Pachankis, J. E. (2016). Discriminatory experiences associated with posttraumatic stress disorder symptoms among transgender adults. *Journal of Counseling Psychology*, *63*, 509–519.

Robles, T. F., & Kiecolt-Glaser, J. K. (2003). The physiology of marriage: Pathways to health. *Physiology & Behavior*, *79*, 409–416.

Revenson, T. A., & DeLongis, A. (2011). Couples coping with chronic illness. In: S. Folkman (Ed.), *The Oxford Handbook of Stress, Health, and Coping* (pp. 101–123). New York, NY: Oxford University Press.

Rosenthal, L., & Starks, T. J. (2015). Relationship stigma and relationship outcomes in interracial and same-sex relationships: Examination of sources and buffers. *Journal of Family Psychology*, *29*, 818–830.

Rostosky, S. S., Riggle, E. D. B., Dudley, M. G., & Comer Wright, M. L. (2006). Commitment in same-sex relationships. *Journal of Homosexuality*, *51*, 199–223.

Rostosky, S. S., Riggle, E. D., Gray, B. E., & Hatton, R. L. (2007). Minority stress experiences in committed same-sex couple relationships. *Professional Psychology: Research and Practice*, *38*, 392–400.

Rusbult, C. E. (1980). Commitment and satisfaction in romantic associations: A test of the investment model. *Journal of Experimental Social Psychology*, *16*, 172–186.

Rusbult, C. E. (1983). A longitudinal test of the investment model: The development (and deterioration) of satisfaction and commitment in heterosexual involvements. *Journal of Personality and Social Psychology*, *45*(1), 101–117.

Rusbult, C. E., & Buunk, B. P. (1993). Commitment processes in close relationships: An interdependence analysis. *Journal of Social and Personal Relationships*, *10*, 175–204.

Rusbult, C. E., Martz, J. M., & Agnew, C. R. (1998). The Investment Model Scale: Measuring commitment level, satisfaction level, quality of alternatives, and investment size. *Personal Relationships*, *5*, 357–391.

Sánchez, F. J., & Vilain, E. (2009). Collective self-esteem as a coping resource for male-to-female transsexuals. *Journal of Counseling Psychology*, *56*, 202.

Sawyer, P. J., Major, B., Casad, B. J., Townsend, S. S. M., & Mendes, W. B. (2012). Discrimination and the stress response: Psychological and physiological consequences of anticipating prejudice in interethnic interactions. *American Journal of Public Health*, *102*, 1020–1026.

Seeman, T. E., Lusignolo, T. M., Albert, M., & Berkman, L. (2001). Social relationships, social support, and patterns of cognitive aging in healthy, high-functioning older adults: MacArthur Studies of Successful Aging. *Health Psychology*, *20*(4), 243–255.

Selcuk, E., & Ong, A. D. (2013). Perceived partner responsiveness moderates the association between received emotional support and all-cause mortality. *Health Psychology*, *32*, 231–235.

Sevelius, J. M. (2013). Gender affirmation: A framework for conceptualizing risk behavior among transgender women of color. *Sex Roles*, *68*, 675–689.

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2004). *Experimental and quasi-experimental designs for generalized causal inference*. Belmont, CA: Wordsworth.

Stafford, L., & Canary, D. (1991). Maintenance strategies and romantic relationship type, gender and relational characteristics. *Journal of Social and Personal Relationships*, *8*, 217–242.

Swim, J. K., Ferguson, M. J., & Hyers, L. L. (1999). Avoiding stigma by association: Subtle prejudice against lesbians in the form of social distancing. *Basic and Applied Social Psychology*, *21*(1), 61–68.

Thibaut, J. W., & Kelly, H. H. (1959). *The social psychology of groups*. New York, NY: Wiley.

Tzeng, O. (1993). *Measurement of love and intimate relations: Theories, scales, and applications for love development, maintenance, and dissolution*. Westport, CT: Praeger Publishers/Greenwood Publishing Group.

White Hughto, J. M., Reisner, S. L., & Pachankis, J. E. (2015). Transgender stigma and health: A critical review of stigma determinants, mechanisms, and interventions. *Social Science & Medicine*, *147*, 222–223.

Wight, R. G., Aneshensel, C. S., Murphy, D. A., Miller-Martinez, D., & Beals, K. P. (2006). Perceived HIV stigma in AIDS caregiving dyads. *Social Science & Medicine*, *62*(2), 444–456.

Wight, R. G., Beals, K. P., Miller-Martinez, D., Murphy, D. A., & Anseshensel, C. S. (2007). HIV-related traumatic stress symptoms in AIDS caregiving family dyads. *AIDS Care*, *19*(7), 901–909.

Williams, D. R., & Mohammed, S. A. (2009). Discrimination and racial disparities in health: Evidence and needed research. *Journal of Behavioral Medicine*, *32*, 20.

Williams, D. R., Yu, Y., Jackson, J. S., & Anderson, N. B. (1997). Racial differences in physical and mental health: Socio-economic status, stress, and discrimination. *Journal of Health Psychology*, *2*, 335–351.

Wong, C. F., Schrager, S. M., Holloway, I. W., Meyer, I. H., & Kipke, M. D. (2014). Minority stress experiences and psychological well-being: The impact of support from and connection to social networks within the Los Angeles house and ball communities. *Prevention Science*, *15*, 44–55.

Yu, C. Y., & Muthen, B. (2002). *Evaluation of model fit indices for latent variable models with categorical and continuous outcomes (Technical Report)*. Los Angeles, CA: University of California at Los Angeles, Graduate School of Education & Information Studies.